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ARI Research Note 95-18

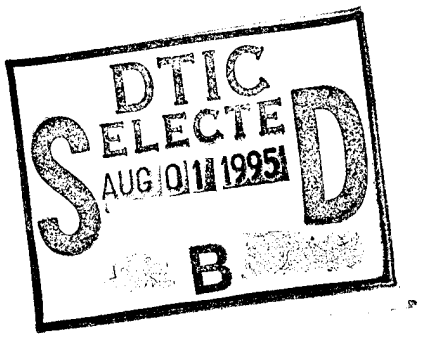
Technical and Analytical Support for the U.S. Army Research Institute

Robert S. Ruskin

Consortium of Universities of the Washington Metropolitan Area

for

Contracting Officer's Representative
Michael Kaplan



Research and Advanced Concepts Office
Michael Drillings, Acting Director

January 1995

United States Army
Research Institute for the Behavioral and Social Sciences

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

A Field Operating Agency Under the Jurisdiction of the Deputy Chief of Staff for Personnel

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Director

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13. ABSTRACT *(Maximum 200 words)*

The objective of this contract was to provide technical and analytical support for the conduct of U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) inhouse research. Area universities, through their membership in the Consortium of Universities, contributed to a wide variety of research projects and provided various technical and analytical support services. The majority of the support services were provided by Consortium Research Fellows (CRFs), graduate students in the social sciences employed by the Consortium to act as research assistants to the scientists at ARI. Other services provided included sharing the Consortium's faculty expertise database, which allows ARI to search on-line and identify persons with particular expertise, experience, or capabilities necessary to provide assistance on a given research task. ARI was given access to faculty expertise and laboratory facilities at Consortium institutions to cooperate in research projects directed by ARI scientists, and Senior Consortium Research Fellows (SCRFs) provided assistance to ARI. The impact of the Consortium's assistance to ARI has been felt in the increased number of CRFs and SCRFs over the 3-year period, in the increased

(Continued)

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13. ABSTRACT (Continued)

number of scientific disciplines represented by CRFs over the 3-year period, in the total number of hours worked by Consortium personnel, in the number of ARI scientists who have acted as "mentors" to CRFs, in the number and quality of research publications resulting from professional relationships between contract personnel and ARI scientists, in the use of Consortium personnel for field research, and in the number and variety of outreach activities associated with the contract.

Technical and Analytical Support
for the
U.S. Army Research Institute

I. SCIENTIFIC OBJECTIVE

The overall objective of this contract was to provide technical and analytical support for the conduct of ARI in-house research. Area universities, through their membership in the Consortium of Universities, contributed to a wide variety of research projects and provided various technical and analytical support services.

II. APPROACH

The Consortium provided technical and analytical support through four primary mechanisms as described below. By far the majority of support services were provided by the Consortium Research Fellows.

A. Consortium Research Fellows

Graduate students in the social sciences were employed by the Consortium to act as research assistants to the scientists at ARI. The Consortium identified these students through graduate departments of computer science, economics, information systems, psychology and sociology at member institutions. The students were screened by the Consortium and matched to appropriate positions at ARI. Known as Consortium Research Fellows (CRFs), they were supervised in their research by scientists at ARI and given overall guidance by the Consortium's Project Director.

CRFs worked in BRO, MPRL, PP&O, SRL, TRL, USAISC and with the TD. Over 40 scientists were mentors to CRFs during the contract period. CRFs undertook such tasks as data collection (some went on TDY to collect data at ARI field units), literature reviews, data analysis, technical writing, and so forth.

The following graduate students worked as Consortium Research Fellows during the course of this contract. Some CRFs worked in more than one area -- their most recent assignments are listed here.

Sharon Ardison (MPRL)	Catholic University
Roya Bauman (MPRL)	George Washington University
Kevin Beares (SRL)	University of Maryland
Andrea Birnbaum (MPRL)	George Washington University
Frances Carter (SRL)	George Mason University
Lee Colan (MPRL)	George Washington University
Robert Dacanay (SRL)	American University
Diane DeMarco (TRL)	American University

Debby Deme (MPRL)	American University
Eleana Edens (MPRL)	George Mason University
Robert Epps (SRL)	Howard University
Cassi Fields (TRL)	George Washington University
Ilene Gast (MPRL)	George Washington University
Carol Geer (SRL)	Howard University
José Guerrier (SRL)	Howard University
Leonard B. Hearne (USAISC)	George Mason University
Patricia Heiber (MPRL)	American University
D. Kristen Herrington (SRL)	Georgetown University
Reginald Hopkins (TRL)	Howard University
Jeffrey Horey (MPRL)	George Washington University
Tracye D. Julien (TRL)	American University
C. Ed Kearl (MPRL)	University of Maryland
Steven Kronheim (BRO)	American University
Julia (Linton) Leaman (MPRL)	George Washington University
Christina Lynn (MPRL)	George Washington University
Jeanne K. Mason (MPRL)	George Washington University
Carolyn Meiers (TRL)	George Mason University
Carmen Moten (MPRL)	Howard University
Eric Neiderman (TRL)	George Mason University
Chavis Patterson (TRL)	American University
Victoria Peacock (MPRL)	Georgetown University
Carol Pollack Nelson (TRL)	George Washington University
Dan Ragland (BRO & TD)	American University
Virginia Rappold (SRL)	George Washington University
Connie Schroyer (MPRL)	George Washington University
Ludger Schuknecht (MPRL)	George Mason University
Daria Sneed (TRL)	Howard University
Jocelyn Turner (MPRL)	Howard University
Patricia Watson (TRL)	Catholic University
Suellen Weaver (MPRL)	George Washington University
Delores Westerman (TRL)	Catholic University
Cheri Wiggs (TRL)	Georgetown University

B. Faculty Expertise Database

The Consortium developed a Faculty Expertise Database representing the faculty of its member institutions and also other schools in the D.C.-Virginia-Maryland region. Faculty were surveyed and asked to describe their education, areas of expertise and interest, and past research experience. The database was brought on-line in the early spring of 1988. It is still growing but now contains over 700 faculty records. ARI may search this database to identify persons with the particular expertise, experience or capabilities necessary to provide assistance on a given research task.

C. Senior Consortium Research Fellows

Senior Consortium personnel also provided assistance to ARI. The following is a list of Senior Consortium Research Fellows who were been involved on ARI projects during the term of the contract:

Mr. Paul Hawkins	Consultant to Consortium
Mr. Mark C. Paster	Consortium of Universities
Dr. Sherman Ross	Howard University
Dr. Robert Ruskin	Consortium of Universities
Dr. Elizabeth Vanderputten	Department of Education

D. Cooperation with Laboratories at Consortium Institutions

ARI was given access to faculty expertise and laboratory facilities at Consortium institutions in order to cooperate in research projects directed by ARI scientists. Two subtasks were completed at the Catholic University of America: Subtask 2A: "Research on Human-Computer Interaction" and Subtask 2B: "Effects of Training on Organization of Knowledge"

III. IMPACT

The technical and analytical assistance provided by the Consortium directly enhances ARI's effectiveness and therefore contributes to the larger Army mission.

Program impact is most pronounced in the following seven areas. These areas have been described and discussed at length through a number of quarterly contract reports and individual monthly CRF reports, already on file.

A. The number of CRFs and SCRFs working with ARI has increased over the three year period to its current level of 29.

B. The number of scientific disciplines represented by the CRFs has increased over the three years of the contract cycle. The original discipline of Psychology has been joined by representatives from Sociology, Computer Science, Information Systems, and Economics.

C. The total number of hours worked by Consortium personnel has steadily increased over the contract, as shown in the graph in Section V. The approximate total of hours worked in year one was 12,000 hours, year two was 19,000 hours and year three will be 23,000 hours.

D. The number of mentors and areas within ARI has been increasing over the contract cycle. As mentioned earlier, PP&O and USAISC have been added to the three major laboratories and the Office of Basic Research as areas utilizing CRF and SCRF services. The number of "official" ARI mentors has increased to 25 but the unofficial number of mentors,

due to a new emphasis on multiple supervision and split CRF appointments, approaches 40 ARI scientists.

E. The number and quality of research publications resulting from the professional relationships between contract personnel and ARI scientists has been steadily growing. Section VI and VII of this report list the 31 publications of special importance emanating during the three years of the contract.

F. The use of Consortium personnel for field research has shown dramatic increase over the past three years. CRFs have been used in data collection efforts at U.S. Army installations across the free world.

G. The Project Director and other SCRFs have greatly increased the number and variety of outreach activities associated with the contract. The increase in requests for presentation and visits to other government agencies and local universities is another sign of the project's success.

IV. FUNDS EXPENDED

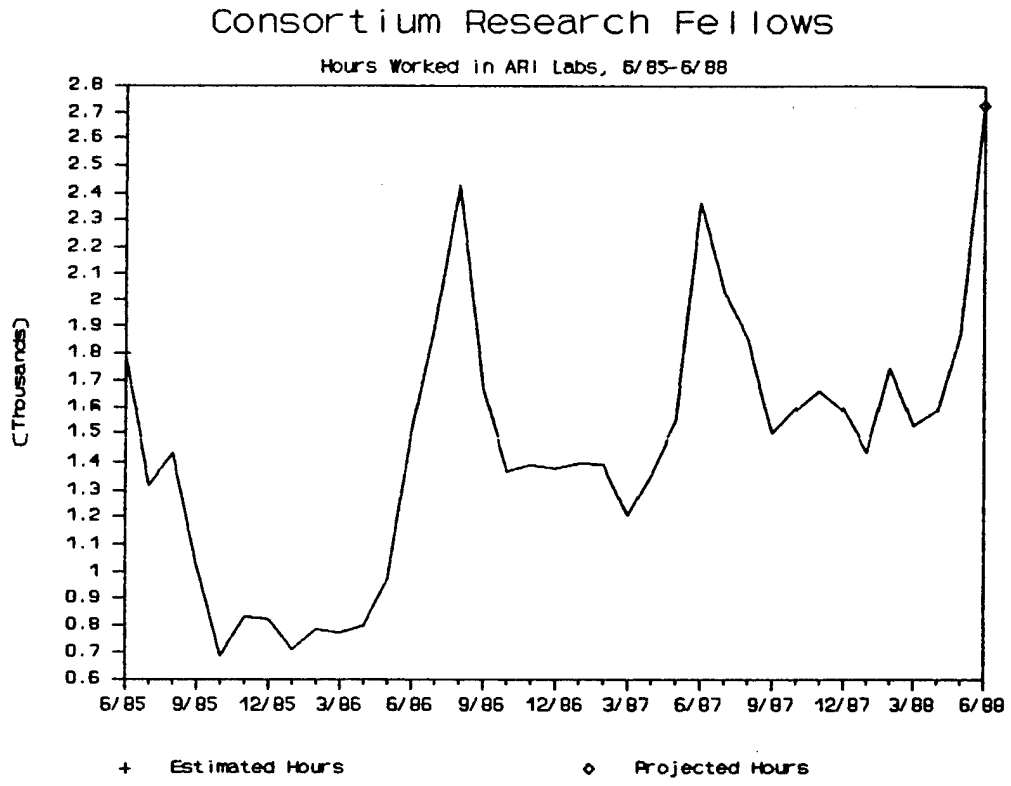
A draft final report showing expenditures on this project from 03 June 1985 through 30 June 1988 is attached.

Projection of funds to be expended
since last quarterly report: $165,432.40

Projection of funds remaining: $0

V. UTILIZATION OF PERSONNEL

The CRFs worked more than 54,000 hours in ARI labs during the course of the contract. The graph below shows the number of hours worked by CRFs during each month of the contract. Draft final reports showing hours worked by CRFs and wages paid to CRFs for the period 03 June 1985 through 30 June 1988 are attached.



The students' activity reports have been attached to past quarterly reports. Student reports for this quarter are attached to this final report.

VI. REPORTS:

Arabian, J. & Mason, J. (1986, October). Relationship of SQT scores to Project A measures. Paper presented at Military Testing Association, Connecticut.

Carter, F.L., Rappold, V.A., Knapp, B.G., & Irizarry, V.C. (1987, October). Development of a test battery and rating scale for morse code intercept operators. Paper presented at the Human Factors Society Annual Meeting, New York, NY.

Carter, F.L. (1987). Comparison of rating scale methods for application in discriminating 05H (morse intercept operator) performance. Working Paper #87-06. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Colan, L., & Siebold, G. (1986). The Army ethic as reflected in OER/EER. Technical Report. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Deme, D. (1988). The ABLE test: A recent literature review of work and achievement orientation. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Hanser, L., Mason, J., Helmick, J., & Disko, A. (1986). Reevaluating the Army's manpower quality accession goals. Working Paper #RS-WP-86-03. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Harris, J.H., Ford, P., Tufano, D., & Wiggs, C. (1985). Application of transfer forecast methods to armor training devices. ARI PB 3565. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. AD A172 210

Hawkins, P., Yale, D., & Kronheim, S.P. (In press). User guide for the Office of Basic Research contract report search system. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Horey, J. (1985). The development and validation of a criterion of non-commissioned officer effectiveness. Paper presented at Annual Meeting of the American Psychological Association.

Irizarry, V.C., & Carter, F.L. (1987). Cognitive profiles of military intelligence soldiers: III. Reasoning, aptitudes, and cognitive styles. Working Paper #87-12. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Kimmel, M., Knapp, B.G., & Carter, F.L. (1987). Job satisfaction factors in military intelligence MOS: 98G (signal intelligence voice intercept) and 33T (tactical intelligence systems repair). Research Report #87-06. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Kronheim, S.P., & Ragland, J.D. (1987). Document Database. Office of Basic Research. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Macpherson, D.H., Patterson, C.A., & Mirabella, A. (In press). Application of ARI skill retention model to wheel vehicle mechanic tasks. ARI Technical Report. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. AD A219 684

Macpherson, D.H., Patterson, C.A., & Mirabella, A. (In press). Application of guidelines for improving skill acquisition, retention, and transfer to wheel vehicle tasks. ARI Technical Report. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Mirabella, A., Macpherson, D.H., & Patterson, C.A. (In press). State of the art analysis of research on skill acquisition, retention, and transfer. ARI Technical Report. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Mirabella, A., Macpherson, D.H., & Patterson, C.A. (In press). State of the art training technology: Rules for application. ARI Research Report. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Pollack, C. (1986, November). Applications of a stage learning model to simulator-based training. Paper presented at the Association for the Development of Computer-Interactive Systems Conference, Arlington, VA.

Pollack, C., Perez, R., & Park, O. (1986). Application of a stage learning theory to a troubleshooting task. Paper presented at the Army Science Conference.

Ruskin, R.S., & Kronheim, S.P. (In press). A description and analysis of five non-traditional instructional systems. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Schroyer, C., & Walker, K.B. (1987). Rates of success in the enlisted Army from 1976-1985. Working Paper #RS-WP-87-02. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Siebold, G., & Colan, L. (1986). The Army ethic as reflected in OER/EER. Draft Technical Report. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Steinberg, A.G., & Leaman, J.A. (1987, October). The Army leader requirements task analysis. Paper presented at the 29th Annual Military Testing Association Conference, Ottawa, Canada.

Steinberg, A.G., & Leaman, J.A. (1988). The Army leader requirements task analysis: Preliminary commissioned officer results. LMTA Working Paper #87-14. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Stewart, N.K., & Weaver, S.F. (1987, November). A methodological analysis of the link between cohesion and combat stress and post-traumatic stress syndrome. Paper presented at the 6th Annual Conference on Combat Stress, San Antonio, Texas.

Stewart, N.K., & Weaver, S.F. (1987). Factors related to military cohesion: A research note. LMTA. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Stewart, N.K., & Weaver, S.F. (1987). Review and critique of research on stress reactions: Problems in methodology. LMTA Working Paper #87-11. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Weaver, S.F., & Stewart, N.K. (1987). Factors influencing combat stress reactions and post-traumatic stress disorder: A literature review. LMTA Technical Report. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. AD A198 063

Wiggs, C. (In press). Evaluation of training device effectiveness: An application and validation of four predictive models. Research Report. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Wiggs, C. & Perez, R. (In press). Knowledge acquisition and task analysis. Research Report. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

VII. ARCHIVAL PUBLICATIONS:

Ruskin, R.S., & Ross, S. (Eds.) (1988). Report on the scientific symposium of the Consortium Research Fellows at the U.S. Army Research Institute. Journal of the Washington Academy of Sciences, 78, 69-86.

Wiggs, C. & Seidel, R.J. (1987). An overview of computer-based instruction in military environments. In R.J. Seidel and P.D. Weddle (Eds.) Computer-based instruction in military environments. New York, NY: Plenum Press.

VIII. GENERAL EFFECT

Overall, the project has proven to be a model cooperative arrangement between the Consortium of Universities and the Army Research Institute. It was designed to enhance the usefulness of university faculty and students as a source of technical assistance to ARI in its ongoing research efforts, and it has succeeded in achieving that goal. We are pleased that this relationship will continue over the next five years. During that period we hope to expand the CRF program into the field units of ARI and to support much more in-house research being undertaken at local university facilities by scientists from the Institute.

ART Contract MDA903-85-C-0216
June 03, 1985 through June 30, 1988

ANALYSIS OF EXPENDITURES TO DATE

Contract Amount: 870,953.00

DRAFT

YEAR ONE:

Description	June 85	July 85	Aug. 85	Sep. 85	Oct. 85	Nov. 85	Dec. 85	Jan. 86	Feb. 86	Mar. 86	Apr. 86	May 86	Total 85/86
Research Assistants	16,312.05	0.00	0.00	0.00	0.00	0.00	55,334.36	8,480.81	7,102.97	6,910.63	7,261.27	9,224.46	110,626.55
Employee Benefits	1,332.70	0.00	0.00	0.00	0.00	0.00	5,472.88	1,088.57	457.07	569.35	987.42	659.53	10,486.72
Consultants	1,000.00	0.00	0.00	0.00	0.00	0.00	5,200.00	0.00	4,000.00	0.00	200.00	3,000.00	13,400.00
Misc/Secy	69.23	0.00	0.00	0.00	0.00	0.00	69.23	0.00	9.87	3.14	1.88	26.37	179.72
Admin. Fees	1,766.15	0.00	0.00	0.00	0.00	0.00	6,008.50	956.94	1,156.99	1,452.63	837.06	1,291.04	13,469.31
Totals	20,480.13	0.00	0.00	0.00	0.00	0.00	72,084.17	10,526.32	12,726.90	8,935.75	9,287.63	14,201.40	148,162.30

YEAR TWO:

Description	June 86	July 86	Aug. 86	Sep. 86	Oct. 86	Nov. 86	Dec. 86	Jan. 87	Feb. 87	Mar. 87	Apr. 87	May 87	Total 86/87
Research Assistants	15,363.62	19,474.42	22,733.86	15,028.73	13,408.63	10,000.91	13,960.46	14,088.04	12,585.83	10,856.48	14,292.80	13,743.89	175,536.85
Employee Benefits	1,098.48	1,392.42	1,625.40	1,074.56	1,621.01	715.02	998.19	1,329.45	985.15	776.22	1,325.69	982.68	13,924.27
Consultants	3,500.00	3,500.00	3,500.00	3,500.00	4,950.00	4,950.00	8,050.00	6,600.00	4,800.00	6,600.00	7,600.00	6,000.00	63,550.00
Secy. Support	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,250.09	1,250.09	1,657.14	1,303.58	1,351.85	6,812.75
Miscellaneous	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	286.35	505.71	52.08	51.52	895.66
Admin. Fees	1,996.21	2,436.68	2,785.85	1,960.32	1,997.96	1,566.59	2,300.86	2,201.75	2,115.75	2,039.55	2,457.42	2,212.99	26,071.93
Totals	21,958.31	26,803.52	30,644.31	21,563.61	21,977.60	17,232.52	25,309.49	25,469.33	22,023.17	22,435.10	27,031.57	24,342.93	286,791.46

YEAR THREE:

Description	June 87	July 87	Aug. 87	Sep. 87	Oct. 87	Nov. 87	Dec. 87	Jan. 88	Feb. 88	Mar. 88	Prelim Apr. 88	Prelim May 88	June 88	Total 87/88
Research Assistants	24,283.09	19,751.82	18,392.51	13,345.81	15,429.83	14,993.35	15,593.79	12,625.16	10,439.41	14,730.97	15,664.00	14,568.00		197,817.74
Employee Benefits	2,156.81	1,412.24	1,315.06	954.20	1,242.24	1,012.07	1,057.07	885.35	1,507.73	1,086.07	1,414.00	1,354.00		15,394.84
Consultants	7,600.00	6,250.00	4,500.00	5,950.00	6,200.00	4,450.00	5,800.00	5,700.00	5,750.00	6,000.00	11,468.00	8,739.00		78,407.00
Secy. Support	2,193.17	2,159.02	2,876.97	3,224.45	3,084.81	2,952.73	2,919.16	3,644.40	3,204.47	3,130.06	4,689.00	4,689.00		38,767.24
Catholic U. Subtasks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15,476.81	0.00	0.00		15,476.81
Miscellaneous	270.27	2.66	100.80	1,483.00	2.75	112.15	127.40	33.31	982.98	2,647.57	340.71	496.00		6,599.60
Admin. Fees	3,650.13	2,957.57	2,718.34	2,495.75	2,595.96	2,352.03	2,549.74	2,288.82	2,988.46	2,759.47	3,357.57	2,984.60		33,698.44
Totals	40,151.47	32,533.31	29,903.68	27,453.21	28,555.59	25,872.33	28,047.16	25,177.04	32,873.05	45,830.95	36,933.28	32,830.60	0.00	386,161.67

Contract MDA903-85-C-0216
Begins: 03 June 1985
Ends: 30 June 1988

Consortium of Universities

Hours Worked in ARI Labs by Consortium Research Fellows

YEAR ONE

	June 85	July 85	Aug 85	Sept 85	Oct 85	Nov 85	Dec 85	Jan 86	Feb 86	Mar 86	Apr 86	May 86	First Yr. Total
BASIC RESEARCH													
Steven Kronheim			156.00	117.00	72.00	76.00	63.00	97.00	64.00	46.00	43.00	57.00	789.00
Victoria Peacock		64.00	91.50	72.00	92.00	69.00	64.00						452.50
Total for BRO	0.00	64.00	245.50	189.00	164.00	145.00	127.00	97.00	64.00	46.00	43.00	57.00	1241.50
MANPOWER AND PERSONNEL RESEARCH LABORATORY													
Sharon Ardison													
Lee Colan		136.00	176.00	144.00	96.00	112.00	120.00	80.00	120.00	112.00	168.00	176.00	1440.00
Ilene Gast		80.00	68.00	44.00									192.00
Jeffrey Horey		16.00											16.00
Cyril E. Knerl					64.00	144.00	176.00	168.00	176.00	160.00	168.00	176.00	1272.00
Joanne Mason		159.00	176.00	122.00	99.00	106.00	110.00	93.50	111.00	100.50	103.50	111.00	1291.50
Victoria Peacock								86.00	95.50	96.00	91.00	100.50	469.00
Carol Pollack		142.00	99.00	111.00									352.00
Connie Schreyer		133.50	137.00	110.50	80.00	93.50	71.00	63.50	96.00	89.50	80.50	126.00	1081.00
Total for MPRL	0.00	666.50	656.00	531.50	339.00	495.50	477.00	491.00	598.50	558.00	611.00	689.50	6113.50
SYSTEMS RESEARCH LABORATORY													
Robert Bacanay		85.00	77.00	52.00	45.00								259.00
Robert Epps		166.00	176.00	56.00									398.00
Carol Geer		160.00	160.00	80.00									400.00
Jose Guerrier		92.50											92.50
Total for SRL	0.00	503.50	413.00	188.00	45.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1149.50
TRAINING RESEARCH LABORATORY													
Cassi Fields													
Carol Pollack					62.00	87.00	101.00	56.50	88.00	83.50	70.00	72.00	72.00
Jocelyn Turner									33.50	84.00	72.00	72.00	620.00
Cheri Wiggs		87.00	119.50	112.00	77.00	104.50	117.00	66.00				80.50	270.00
Total for TRL	0.00	87.00	119.50	112.00	139.00	191.50	218.00	122.50	121.50	167.50	142.00	224.50	1645.00
Total CRF hours	1000.00 (Est.)	1321.00	1434.00	1020.50	687.00	832.00	822.00	710.50	784.00	771.50	796.00	971.00	11949.50
% hours to BRO		0.05	0.17	0.19	0.24	0.17	0.15	0.14	0.08	0.06	0.05	0.06	0.10
% hours to MPRL		0.50	0.46	0.52	0.49	0.60	0.58	0.69	0.76	0.72	0.77	0.71	0.51
% hours to SRL		0.38	0.29	0.18	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
% hours to TRL		0.07	0.08	0.11	0.20	0.23	0.27	0.17	0.15	0.22	0.18	0.23	0.14

DRAFT

Contract MDA903-85-C-0216
Begins: 03 June 1985
Ends: 31 May 1988

Consortium of Universities

Hours Worked in ARI Labs by Consortium Research Fellows

YEAR TWO

	June 86	July 86	Aug 86	Sept 86	Oct 86	Nov 86	Dec 86	Jan 87	Feb 87	Mar 87	Apr 87	May 87	Second Yr Total
BASIC RESEARCH													
Steven Trenholm	95.00	81.50	100.00		29.00	80.00	90.50	73.50	57.00	68.00	83.00	91.00	868.50
Carmen Moten								40.00	100.00	80.00	111.00	118.00	449.00
Total for BRO	95.00	81.50	100.00	0.00	29.00	80.00	90.50	113.50	157.00	148.00	194.00	209.00	1297.50
MANPOWER AND PERSONNEL RESEARCH LABORATORY													
Sharon Ardison			143.00	92.00	84.00	45.00	38.75	35.00	78.75	62.50	78.00	80.00	729.00
Lee Colan	176.00	144.00	180.00	168.00									676.00
Bobby Dees											82.00	51.00	133.00
Patricia Holber					72.00	64.00							136.00
Cyril R. Kearl	184.00	152.00	200.00	172.00	160.00	152.00	168.00	152.00	152.00	40.00			1,540.00
Julie Linton												64.00	64.00
Christine Lynn		44.50	124.00	58.00	81.50	72.50		97.00	79.00	63.50	91.00	76.50	787.50
Joanne Mason	142.50	135.00	168.00	147.00	108.00	105.00	103.00	104.00	104.50	100.00	100.00	112.00	1,419.00
Victoria Peacock	152.00	123.50	173.00	127.00	126.00	107.00	67.00						875.50
Connie Schroyer	164.50	160.00	190.00	135.00	102.00	84.50	117.00	108.00	112.00	96.00	117.00	140.00	1,526.00
Suellen Weaver												62.50	62.50
Total for MPRL	819.00	749.00	1194.00	899.00	733.50	630.00	493.75	496.00	518.25	362.00	468.00	586.00	7948.50
SYSTEMS RESEARCH LABORATORY													
Frances Carter	40.00	160.00	176.00	120.00	96.00	96.00	84.00	84.00	84.00	84.00	88.00	136.00	1246.00
Virginia Rappold	25.00	24.00	45.50	32.50	20.00	30.00	43.00	33.50	31.50	27.00	23.00	17.00	352.00
Total for SRL	65.00	184.00	221.50	152.50	116.00	126.00	127.00	117.50	115.50	111.00	111.00	151.00	1598.00
TRAINING RESEARCH LABORATORY													
Dixie DeMarco		128.00	168.00	120.00	96.00	72.00		160.00	60.00	101.00			905.00
Carol Pollack Nelson	163.50	127.00	197.50	144.00	115.50	113.50	162.00	56.00	131.00	86.50	116.00	67.50	1480.00
Doris Snead	144.00	150.50	96.50	55.00	61.00	108.50	89.50	82.50	75.50	92.00	103.00	106.50	1020.50
Jocelyn Turner	168.00	151.00	173.00	89.00	75.00	92.00	130.00	88.00	100.00	80.00	102.50	152.00	1376.50
Patricia Watson	52.00	156.00	160.00	86.00	83.00	96.00	103.00	144.00	90.00	83.00	108.00	108.00	1383.00
Cheri Wiggs		186.00	120.00	127.00	60.00		96.00	100.00	56.00	47.00	40.00	72.00	954.00
Total for TRL	527.50	896.50	915.00	621.00	490.50	554.00	667.50	668.50	604.50	582.00	582.50	597.50	7707.00
Total CRP hours	1506.50	1911.00	2430.50	1672.50	1369.00	1390.00	1378.75	1395.50	1395.25	1203.00	1355.50	1543.50	18551.00
% hours to BRO	0.06	0.04	0.04	0.00	0.02	0.06	0.07	0.08	0.11	0.12	0.14	0.14	0.07
% hours to MPRL	0.54	0.39	0.49	0.54	0.54	0.45	0.36	0.36	0.37	0.30	0.35	0.38	0.43
% hours to SRL	0.04	0.10	0.09	0.09	0.08	0.09	0.09	0.08	0.08	0.09	0.08	0.10	0.09
% hours to TRL	0.35	0.47	0.38	0.37	0.36	0.40	0.48	0.48	0.43	0.48	0.43	0.39	0.42

Consortium Research Fellows at ARI
Wages paid-yr.2

	June 86	July 86	Aug 86	Sept 86	Oct 86	Nov 86	Dec 86	Jan 87	Feb 87	Mar 87	Apr 87	May 87	Total
BRO													
Kronhein	1,045.00	896.50	1,100.00	0.00	319.00	880.00	995.50	888.50	627.00	748.00	913.00	1,031.03	9,363.53
Moton	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00	950.00	760.00	1,054.50	1,276.40	4,418.90
Total for BRO	1,045.00	896.50	1,100.00	0.00	319.00	880.00	995.50	1,188.50	1,577.00	1,508.00	1,967.50	2,305.43	13,782.43
HPRL													
Ardison	0.00	0.00	1,498.64	964.16	880.32	471.60	406.10	366.80	741.46	655.00	817.44	864.00	7,665.52
Colan	1,844.48	1,589.12	1,970.24	1,760.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7,884.48
Dene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	656.00	408.00	1,064.00
Heiber	0.00	0.00	0.00	0.00	754.56	670.72	0.00	0.00	0.00	0.00	0.00	0.00	1,425.28
Kearl	2,824.00	1,672.00	2,288.00	1,892.00	1,760.00	1,672.00	1,848.00	1,672.00	1,672.00	440.00	0.00	0.00	16,940.00
Linton	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	508.16	508.16
Lyna	0.00	344.88	961.00	449.50	631.63	561.88	0.00	751.75	612.25	492.13	705.25	675.50	6,185.75
Mason	1,493.40	1,310.00	1,760.64	1,540.56	1,131.84	1,100.40	1,079.44	1,089.92	1,095.16	1,048.00	1,048.00	1,209.60	14,906.96
Peacock	1,302.64	1,058.40	1,482.61	1,088.39	1,079.82	916.99	574.19	0.00	0.00	0.00	0.00	0.00	7,503.04
Schroyer	1,723.96	1,676.88	1,991.20	1,414.80	1,868.96	885.56	1,226.16	1,131.84	1,173.76	1,006.08	1,226.16	1,512.00	16,037.28
Weaver	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	496.25	496.25
Total for HPRL	8,388.48	7,571.19	11,952.33	9,110.05	7,307.13	6,279.15	5,133.89	5,012.31	5,294.63	3,641.21	4,452.85	5,673.51	79,816.71
SRL													
Carter	310.00	1,240.00	1,364.00	930.00	744.00	744.00	651.00	651.00	651.00	651.00	682.00	1,183.22	9,801.22
Leppold	262.00	251.52	476.84	340.60	209.60	314.40	450.64	351.08	330.12	282.96	241.04	183.60	3,694.40
Total for SRL	572.00	1,491.52	1,840.84	1,270.60	953.60	1,058.40	1,101.64	1,002.08	981.12	933.96	923.04	1,366.82	13,495.62
TRL													
DeMarco	0.00	992.00	1,302.00	930.00	744.00	558.00	0.00	1,240.00	465.00	782.75	0.00	0.00	7,013.75
Fields	1,401.20	1,088.39	1,692.58	1,234.08	989.84	972.70	1,388.34	479.92	1,122.67	741.31	994.12	729.00	12,834.13
Pollack Nelson	0.00	1,655.50	1,861.50	685.00	671.00	1,193.50	984.50	987.50	830.50	1,012.00	1,133.00	1,206.65	11,260.65
Snood	1,234.08	1,294.07	1,482.61	762.73	642.75	788.44	1,114.10	754.16	857.00	685.60	878.43	1,342.16	11,836.13
Turner	1,439.76	1,319.78	1,371.20	737.02	711.31	822.72	882.71	1,234.08	771.30	711.31	925.56	951.64	11,880.39
Watson	403.00	1,441.50	930.00	984.25	465.00	0.00	744.00	775.00	418.50	364.25	310.00	571.68	7,407.18
Wiggs	0.00	0.00	0.00	0.00	0.00	756.56	911.76	398.24	985.12	969.40	1,184.24	988.20	6,191.52
Total for TRL	4,478.04	7,791.24	7,839.89	5,253.08	4,223.90	5,089.92	6,025.41	5,788.90	5,450.09	5,266.62	5,425.35	5,791.33	68,423.74
Total CRF wages	14,483.52	17,750.45	22,733.06	15,633.73	12,803.62	13,307.46	13,256.44	12,991.79	13,302.84	11,349.78	12,768.74	15,137.08	175,518.50
% wages to BRO	0.07	0.05	0.05	0.00	0.02	0.07	0.08	0.09	0.12	0.13	0.15	0.15	0.08
% wages to HPRL	0.58	0.43	0.53	0.58	0.57	0.47	0.39	0.39	0.40	0.32	0.35	0.37	0.45
% wages to SRL	0.04	0.08	0.08	0.08	0.07	0.08	0.08	0.08	0.07	0.08	0.07	0.09	0.08
% wages to TRL	0.31	0.44	0.34	0.34	0.33	0.38	0.45	0.45	0.41	0.46	0.42	0.38	0.39

Contract HDA903-85-C-0216
Begins: 03 June 1985
Ends: 31 May 1988

Consortium of Universities

Hours Worked in ARI Labs by Consortium Research Fellows

YEAR THREE

	June 87	July 87	Aug 87	Sept 87	Oct 87	Nov 87	Dec 87	Jan 88	Feb 88	Mar 88	Apr 88	May 88	June 88	Third Yr To Date
BASIC RESEARCH														
Steven Kronheim	152.00	138.00	160.00	29.00	69.50	76.00	44.50	56.50	75.50	67.50	90.50	139.50		1,098.50
Carmen Moten	256.50	157.00	133.50											545.00
Dan Ragland				36.50	86.00	94.00	56.00	70.50	80.00	32.00	54.00	60.50		567.50
Virginia Rappold									18.50	24.00	0.00	35.00		77.50
Total for BRO	408.50	295.00	293.50	65.50	155.50	170.00	98.50	127.00	174.00	123.50	144.50	235.00	0.00	2288.50
HARPOWER AND PERSONNEL RESEARCH LABORATORY														
Sharon Ardison	167.00	167.50	96.00	112.00	69.00	87.00	87.00	87.00	87.00	87.00	87.00	135.50		1,269.00
Roya Beenan												35.25		35.25
Andrea Birnbaum												30.00		30.00
Bobby Bone	95.00	0.00	0.00	41.00	90.50	79.00	74.00	0.00	88.50	64.50	73.50	106.50		712.50
Eleana Edens					31.75	53.50	0.00	28.50	68.83	28.00	10.75	35.25		256.58
Julie (Linton) Leeman	160.00	160.00	88.00	112.00	83.00	87.00	39.00	87.00	91.00	90.50	91.00	120.00		1,216.50
Christine Lynn	129.50	153.25	145.50	92.50	70.00	92.50	64.00	75.00	84.00	91.50	59.00	81.50		1,138.25
Jeanne Mason	104.00	104.00	100.50	110.00	87.00	88.00	93.00	104.00	88.00	88.00	88.00	87.00		1,141.50
Carmen Moten			38.50	96.50	87.00	87.50	87.00	87.00	88.00	170.00	137.50	174.00		1,051.00
Connie Schroyer	167.00	172.00	168.00	136.00	98.00	90.00	136.00	140.00	128.00	143.00	145.00			1,521.00
Ledger Schuknecht				83.00	83.25	85.75	82.75	83.75	46.50					465.00
Jocelyn O. Turner				79.00	87.50	76.50	45.00	50.50	75.00	81.00	80.00			574.50
Suellen Weaver	136.00	160.00	143.50	120.50	88.00	84.00	78.00	80.00	92.00	87.00	94.00	132.00		1,295.00
Total for HPRL	958.50	916.75	780.00	978.50	875.00	910.75	785.75	822.75	936.83	938.50	865.75	965.00	0.00	10714.08
PP&O/USAISC														
Leonard B. Hearne						43.25	68.00	0.00	58.50	0.00	105.25			275.00
Total for PP&O/USAISC						43.25	68.00	0.00	58.50	0.00	105.25	0.00	0.00	275.00
SYSTEMS RESEARCH LABORATORY														
Frances Carter	152.00	80.00	32.00	120.00	84.00	88.00	60.00							616.00
Kristen Herrington				36.00	88.00	85.00	76.00	72.00	61.00	0.00	0.00			418.00
Virginia Rappold	20.00	20.50	23.00	23.50	25.00	18.00	0.00	30.75						160.75
Total for SRL	172.00	100.50	55.00	179.50	197.00	191.00	136.00	102.75	61.00	0.00	0.00	0.00	0.00	1194.75
TRAINING RESEARCH LABORATORY														
Cassi Fields	103.50	137.00	170.75	23.00										434.25
Reginald Hopkins										28.50	54.00	89.00		171.50
Tracye D. Julien							68.00	68.50	75.00	56.00	64.00	68.00		399.50
Carolyn Meiers				38.50	52.00	78.00	32.50	44.25	37.25	44.75	14.00			341.25
Chavis Patterson				15.50	59.50	62.00	52.00	47.50	67.50	69.00	68.00	81.00		522.00
Carol Pollack Nelson	157.50	147.00	197.00	62.00	88.00	90.50	123.50	83.00	90.50	5.00				1044.00
Daria Snead	204.00	152.50	128.25	78.50	69.50	64.00	79.00	74.00	75.00	78.00	80.50	145.00		1228.25
Jocelyn Turner	166.50	155.50	95.50									83.50		501.00
Patricia Watson	156.00	128.00	136.00	56.50	52.00		89.00	68.00	76.00	76.00	72.00	80.00		985.50
Dolores Westerman									50.00	52.00	67.50	82.00		251.50
Cheri Wiggs	43.00				41.00	54.00	58.00	0.00	45.50	53.50	43.00	62.00		400.00
Total for TRL	830.50	720.00	727.50	272.00	362.00	348.50	502.00	385.25	514.75	462.75	463.00	690.50	0.00	6278.75
Total CRP hours	2367.50	2032.25	1856.00	1495.50	1589.50	1663.50	1590.25	1437.75	1745.08	1524.75	1578.50	1870.50	0.00	20751.08
% hours to BRO	0.17	0.15	0.16	0.04	0.10	0.10	0.06	0.09	0.10	0.08	0.09	0.13	[illegible]	0.11

% hours to HPRL	0.40	0.45	0.42	0.68	0.55	0.55	0.49	0.57	0.56	0.62	0.55	0.51	ERR	0.52
% hours to PP&O/USAISC						0.03	0.04	0.00	0.03	0.00	0.07	0.00	ERR	0.01
% hours to SRL	0.07	0.05	0.03	0.12	0.12	0.11	0.09	0.07	0.03	0.00	0.00	0.00	ERR	0.06
% hours to TRL	0.35	0.35	0.39	0.18	0.23	0.21	0.32	0.27	0.29	0.30	0.29	0.37	ERR	0.30

Consortium Research Fellows at ARI

Wages paid-yr.3	June 87	July 87	Aug 87	Sept 87	Oct 87	Nov 87	Dec 87	Jan 88	Feb 88	Mar 88	Apr 88	May 88	June 88	To Date
BRO														
Krochain	1,722.16	1,563.56	1,812.80	328.57	787.44	861.08	504.19	653.16	872.78	780.30	1,046.18	1,612.62	0.00	12,544.79
Moten	2,748.60	1,695.60	1,441.80											5,886.00
Regland				322.30	759.38	830.02	476.82	642.96	729.60	291.84	492.48	551.76	0.00	5,097.16
Rappold									203.69	264.24	0.00	385.35	0.00	853.28
Total for BRO	4,470.76	3,259.16	3,254.60	650.87	1,546.82	1,691.10	981.01	1,296.10	1,602.38	1,072.14	1,538.66	2,164.38	0.00	24,381.22
HPRL														
Ardison	1,883.60	1,889.00	1,936.80	1,289.60	745.20	939.60	939.60	957.87	957.87	957.87	957.87	1,491.86	0.00	13,806.74
Bauman												298.57	0.00	298.57
Birabeau												321.86	0.00	321.86
Done	760.00	0.00	0.00	328.00	724.00	632.00	592.00	0.00	749.60	546.32	622.55	902.06	0.00	5,856.51
Edens				0.00	310.52	523.23	0.00	284.15	686.24	279.16	107.18	351.44	0.00	2,541.91
Lennan (Linton)	1,270.40	1,270.40	698.72	889.28	659.02	690.78	389.66	793.44	829.92	898.32	829.92	1,894.40	0.00	10,234.26
Lyna	1,163.49	1,353.20	1,284.77	816.78	618.10	816.78	565.12	684.00	766.08	834.48	538.08	743.28	0.00	10,164.14
Mason	1,123.20	1,123.20	1,085.40	1,188.00	939.60	950.40	1,004.40	1,145.04	968.88	968.88	968.88	957.87	0.00	12,423.75
Moten			415.80	1,020.60	939.60	945.00	939.60	957.87	968.88	1,871.70	1,513.88	1,915.74	0.00	11,488.67
Schroyer	1,883.60	1,857.60	1,814.40	1,447.20	1,058.40	972.00	1,468.80	1,541.40	1,409.28	1,574.43	1,596.45	0.00	0.00	16,543.56
Schuknecht				811.74	814.19	838.64	809.30	834.99	463.61	0.00	0.00	0.00	0.00	4,572.45
Turner				697.57	772.63	675.50	397.35	460.56	684.00	738.72	729.60	0.00	0.00	5,155.92
Weaver	1,079.84	1,270.40	1,139.39	956.77	698.72	666.96	619.32	729.60	839.04	793.44	857.28	1,203.84	0.00	10,854.60
Total for HPRL	8,984.13	8,683.80	7,475.28	9,365.56	8,279.97	8,650.88	7,645.15	8,388.91	9,323.39	9,463.32	8,721.68	9,280.91	0.00	104,262.92
PP&O/USAISC														
Hearne						467.10	734.40	0.00	644.09	0.00	1,158.80	0.00	0.00	3,004.39
Total for PP&O/USAISC						467.10	734.40	0.00	644.09	0.00	1,158.80	0.00	0.00	3,004.39
SRL														
Carter	1,342.16	706.40	282.56	1,059.60	741.72	777.04	529.80							5,439.28
Herrington				256.60	627.44	606.05	541.88	564.48	478.24	0.00	0.00	0.00	0.00	3,074.77
Rappold	216.00	221.40	248.40	253.80	270.00	194.40	0.00	338.56						1,742.56
Total for SRL	1,558.16	927.80	530.96	1,570.00	1,639.16	1,577.49	1,071.68	903.04	478.24	0.00	0.00	0.00	0.00	10,256.61
TRL														
Fields	1,117.80	1,479.60	1,844.10	248.40										4,689.90
Hopkins										259.92	492.48	811.68	0.00	1,564.08
Julien							484.84	537.04	588.00	439.04	501.76	533.12	0.00	3,083.80
Meiers				274.51	370.76	556.14	231.73	346.92	292.84	350.84	109.76	0.00	0.00	2,532.69
Patterson				110.52	424.24	442.06	370.76	372.40	529.20	540.96	533.12	635.04	0.00	3,958.29
Pollack Nelson	1,784.48	1,665.51	2,232.81	782.46	997.04	1,025.37	1,399.26	959.48	1,046.18	57.80	0.00	0.00	0.00	11,869.58
Sneed	1,881.32	1,346.58	1,132.45	693.16	613.69	565.12	697.57	674.88	684.00	711.36	736.16	1,322.40	0.00	10,976.67
Turner	1,478.20	1,373.87	843.27											3,686.53
Watson	1,238.64	1,016.32	1,079.84	432.73	412.88	0.00	785.87	620.16	674.88	693.12	656.64	729.60	0.00	8,340.68
Westerman									350.00	572.52	743.18	902.82	0.00	2,568.52
Wiggs	464.40	0.00	0.00	0.00	442.80	583.20	626.40	0.00	500.96	589.04	473.43	682.62	0.00	4,362.84
Total for TRL	7,876.83	6,881.87	7,131.66	2,461.77	3,261.40	3,171.89	4,596.42	3,510.88	4,665.26	4,214.59	4,244.53	5,617.28	0.00	57,633.57
Total CRF wages	22,889.88	19,751.81	18,392.50	14,048.25	14,727.34	15,558.45	15,028.65	14,098.93	16,713.35	14,750.05	15,663.67	17,062.57	0.00	199,538.70
% wages to BRO	0.20	0.17	0.18	0.05	0.11	0.11	0.07	0.09	0.10	0.07	0.10	0.13	ERR	0.12
% wages to HPRL	0.39	0.44	0.41	0.67	0.56	0.56	0.51	0.60	0.56	0.64	0.56	0.54	ERR	0.52
% wages to PP&O/USAISC	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.00	0.04	0.00	0.07	0.00	ERR	0.02

% wages to SRL	0.07	0.05	0.03	0.11	0.11	0.10	0.07	0.06	0.03	0.00	0.00	0.00	ERR	0.05
% wages to TRL	0.34	0.35	0.39	0.18	0.22	0.20	0.31	0.25	0.28	0.29	0.27	0.33	ERR	0.29